

## **METHODS FOR INJECTING CATALYST INTO A POLYMERIZATION REACTOR**

### **ABSTRACT**

A polymerization process and a catalyst delivery system are provided. For example, a polymerization process is described, including providing a conduit having a catalyst inlet, a first propylene stream inlet located downstream of the catalyst inlet, and a second propylene stream inlet located downstream of the first propylene stream inlet, the conduit being operably connected to a polymerization vessel, introducing a catalyst to the conduit through the catalyst inlet, and passing the catalyst through the conduit to the polymerization vessel. The process may further include introducing a first propylene stream to the conduit to provide a mixed catalyst stream downstream of the catalyst inlet. The process may additionally include stopping the flow of the catalyst passing through the conduit, introducing a second propylene stream to the conduit through the second propylene stream inlet, removing a section of the conduit, and replacing the removed section of the conduit with a different conduit section. The catalyst delivery system may include a conduit having a catalyst inlet, a first propylene stream inlet and a second propylene stream inlet located downstream of the first propylene stream inlet, the conduit being operably connected to a polymerization vessel and having a removable portion, the second propylene stream inlet being configured to prevent polymer from passing from the polymerization vessel into the conduit during conduit maintenance.